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| **Laboratory and Pathology Service Line** | **Procedure Name:** Specimen Collection Policy |
| **Page:** 1 of 5 | **Procedure Number:** ADM.020  |
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**Routine Venipuncture Guidelines**

**Equipment**

1. Safety Needles, 22g or less
2. Butterfly needles, 21g or less
3. Syringes
4. Blood Collection Tubes.  The vacuum tubes are designed to draw a predetermined volume of blood. Tubes with different additives are used for collecting blood specimens for specific types of tests. The color of the rubber stopper is used to identify these additives. See Table 1 for details about the most commonly used collection tubes.
5. Tourniquets.  Latex-free tourniquets are available.
6. Antiseptic.  Individually packaged 70% isopropyl alcohol wipes or 10% Povidone-Iodine prep pads (used for specific lab testing where alcohol pads cannot be used).
7. 2x2 Gauze or cotton balls.
8. Sharps Disposal Container.  An OSHA acceptable, puncture proof container marked "Biohazardous"
9. Bandages or tape

**Safety**

1. Observe universal (standard) safety precautions.  Observe all applicable isolation procedures.
2. Personal Protective Equipment will be worn at all time.
3. Wash hands in warm, running water with chlorhexidine gluconate hand washing product (approved by the Infection Control Committee), or if not visibly contaminated with a commercial foaming hand wash product before and after each patient collection.
4. Gloves are to be worn during all phlebotomies, and changed between patient collections.  Palpation of phlebotomy site may be performed without gloves providing the skin is not broken.
5. A lab coat or gown must be worn during blood collection procedures.
6. Needles and hubs are single use and are disposed of in an appropriate sharps container as one unit.
**Needles are never recapped, removed, broken, or bent after phlebotomy procedures.**
7. Gloves are to be discarded in the appropriate container immediately after the phlebotomy procedure. All other items used for the procedure must be disposed of according to proper biohazardous waste disposal policy.
8. Contaminated surfaces must be cleaned with freshly prepared 10% bleach solution or bleach wipes.  All surfaces are cleaned daily with disinfecting wipes.
9. In the case of an accidental needle stick, immediately wash the area with an antibacterial soap, express blood from the wound, and contact your supervisor.

**Procedure**

1. Identify the patient.  Outpatients are called into the phlebotomy area and asked their name and date of birth.  This information must match the requisition. Inpatients are identified by their arm band. If it has been removed, a nurse must install a new one before the patient can be drawn.
2. Reassure the patient that the minimum amount of blood required for testing will be drawn.
3. Assemble the necessary equipment appropriate to the patient's physical characteristics.
4. Wash hands and put on gloves.
5. Position the patient with the arm extended to form a straight-line from shoulder to wrist.
6. Do not attempt a venipuncture more than twice.  Notify your supervisor or patient's physician if unsuccessful.
7. Select the appropriate vein for venipuncture. The larger median cubital, basilic and cephalic veins are most frequently used, but other may be necessary and will become more prominent if the patient closes his fist tightly.  **At no time may phlebotomists perform venipuncture on an artery.  At no time will blood be drawn from the feet.**
Factors to consider in site selection:
* Extensive scarring or healed burn areas should be avoided.
* Specimens should not be obtained from the arm on the same side as a mastectomy.
* Avoid areas of hematoma.
* If an IV is in place, samples may be obtained below but NEVER above the IV site.
* Do not obtain specimens from an arm having a cannula, fistula, or vascular graft.
* Allow 10-15 minutes after a transfusion is completed before obtaining a blood sample.
1. Apply the tourniquet 3-4 inches above the collection site.  Never leave the tourniquet on for over 1 minute. If a tourniquet is used for preliminary vein selection, release it and reapply after two minutes.
2. Clean the puncture site by making a smooth circular pass over the site with the 70% alcohol pad, moving in an outward spiral from the zone of penetration.  Allow the skin to dry before proceeding.  Do not touch the puncture site after cleaning.
3. Perform the venipuncture
4. Attach the appropriate needle to the hub by removing the plastic cap over the small end of the needle and inserting into the hub, twisting it tight.
5. Remove plastic cap over needle and hold bevel up.
6. Pull the skin tight with your thumb or index finger just below the puncture site.
7. Holding the needle in line with the vein, use a quick, small thrust to penetrate the skin and enter the vein in one smooth motion.
8. Holding the hub securely, insert the first vacutainer tube following proper order of draw into the large end of the hub penetrating the stopper.  Blood should flow into the evacuated tube.
9. After blood starts to flow, release the tourniquet and ask the patient to open his or her hand.
10. When blood flow stops, remove the tube by holding the hub securely and pulling the tube off the needle.  If multiple tubes are needed, the [**proper order of draw**](http://uams.edu/clinlab/Forms/ORDER%20OF%20DRAW%20CHART.pdf) to avoid cross contamination and erroneous results is as follows:
* Blood culture vials or bottles, sterile tubes
* Coagulation tube (light blue top) (Routine PT/PTT may be performed if blue top is first tube collected.  It may be desirable to collect a second tube for other coagulation assays.)
* Serum tube with or without clot activator or silica gel (Red or Gold)
* Heparin tube (Green top)
* EDTA (Lavender top)
* Glycolytic inhibitor (Gray top)

Special Note when using butterfly collection device: When coagulation tube (light blue top) will be the first tube collected, it is mandatory to collect a discard light blue top first to remove the air from the tubing.  A second light blue top can then be collected appropriately.  Failure to collect the discard tube may result in specimen being rejected due to inappropriate volume.

1. Each coagulation tube (light blue top) should be gently inverted 4 times after being removed from the hub.  Red and gold tops should be inverted 5 times.  All other tubes containing an additive should be gently inverted 8-10 times.  **DO NOT SHAKE OR MIX VIGOROUSLY.**
2. Place a gauze pad over the puncture site and remove the needle.  Immediately apply slight pressure.  Ask the patient to apply pressure for at least 2 minutes.  When bleeding stops, apply a fresh bandage, gauze or tape.
3. Properly dispose of hub with needle attached into a sharps container.  Label all tubes with patient labels, initials, date and time.
4. Venipuncture procedure using a syringe:
	1. Place a sheathed needle or butterfly on the syringe.
	2. Remove the cap and turn the bevel up.
	3. Pull the skin tight with your thumb or index finger just below the puncture site.
	4. Holding the needle in line with the vein, use a quick, small thrust to penetrate the skin and vein in one motion.
	5. Draw the desired amount of blood by pulling back slowly on the syringe stopper.
	6. Release the tourniquet.
	7. Place a gauze pad over the puncture site and quickly remove the needle.  Immediately apply pressure.  Ask the patient to apply pressure to the gauze for at least 2 minutes.  When bleeding stops, apply a fresh bandage, gauze or tape.
	8. Transfer blood drawn into the appropriate tubes as soon as possible using a needleless BD Vacutainer Blood Transfer Device, as a delay could cause improper coagulation. Gently invert tubes containing an additive 5-8 times.
	9. Dispose of the syringe and needle as a unit into an appropriate sharps container.
5. Infant/Child Phlebotomy
6. Confirm the patient's identification
7. Secure patient to Papoose apparatus for stabilization if child is unable to sit upright on their own.
8. Assemble the required supplies
9. Select the collection site and proceed as routine phlebotomy.  If the child is old enough, collect blood as an adult.

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### Time-Dependent Specimens

Some specimens are time-dependent. In order for the laboratory departments to process them correctly, specimens must be collected/received within their time constraints to be accepted by the Laboratory. The Lab Test Directory website should be consulted for specimen time limitations.

<https://www.testmenu.com/UAMS>

Table 1

## SPECIMEN CONTAINER TYPES

### Most Commonly Used Blood Collection Tubes

|  |  |  |
| --- | --- | --- |
| **Stopper Color** | **Volume** | **Contents and Function** |
| **Red (RT)** | 7, 10 mL | Sterile, no anticoagulant or additives. Collection of serum for chemical or serological and bacteriologic studies. May be used for any procedure requiring serum except HLA antibody tests. |
| **Special Red (RT)** | 7 mL | Contains no silicone, gel separators, anticoagulants, or additives of any kind.  Can be used for collection of serum for HLA antibody screen/PRA and platelet-specific antibody screen. |
| **Gold (GT)** | 7 mL | Sterile, silica clot activator and inert polymer serum separator gel. Collection of serum for chemistry studies.  For acceptability, please refer to the alphabetical section of this manual. NOT FOR USE FOR BLOOD BANK PROCEDURES!!! |
| **Lavender (LT)** | 5 mL | Sterile, contains EDTA (Ethylene Diamine Tetra Acetate) as the anticoagulant. \*MIX WELL!\* Primarily for collection of hematology studies, blood bank procedures and certain chemistries. |
| **Blue (BLT)** | 4.5 mL | Sterile, contains sodium citrate (0.109M, 3.2%) solution as the anticoagulant. Tube calibrated to draw only 4.5 ml of blood. Only properly filled tubes are accepted for testing. \*MIX WELL!\*Primarily for collection of coagulation studies. |
| **Gray (GYT)** | 3 mL | Sterile, contains potassium oxalate and sodium fluoride as the anticoagulant. \*MIX WELL!\* For the collection of glucose and lactate samples. Not suitable for enzymes or electrolytes. |
| **Green (GRN)** | 5 mL | Sterile, contains lithium heparin as the anticoagulant. \*MIX WELL!\* For collection of other miscellaneous studies. Electrolytes, glucose, BUN can be performed more quickly than from a red top; especially useful for patients in DKA. |
| **Special Green (SGRN)** | 7 mL | Sterile, contains sodium heparin as the anticoagulant. For collection of flow cytometry specimens. \*MIX WELL!\* |
| **Yellow (YT)** | 6 mL | Sterile, contains ACD (Acid Citrate Dextrose) as the anticoagulant. \*MIX WELL!\* For determination of HLA-ABC antigens, HLA-B27, HLA Molecular Typing, G6PD levels and acid phosphatase levels. |
| **Royal Blue (RBL)** | 7 mL | Sterile, contains no anticoagulant. For detection of trace metals (i.e., Arsenic, Zinc, etc.). Contact lab to acquire this tube. |
| **Pink (PT)** | 7 mL | Sterile, does not contain any anticoagulant, serum separator, or silicone coating.  For detection of HLA antibodies in serum (CYTS). |
| **Tan**   |   | Sodium heparin (glass) or K2EDTA (plastic).  For lead determinations.  This tube contains less than .01µg/mL(ppm) lead. Tube inversions prevent clotting. |
| **Pearl Top (PPT, Plasma Preparation Tube)** | 5 mL | Contains 9 mg K2EDTA.  For viral load monitoring or viral detection |

**\* GENTLY invert tube 5-10 times: DO NOT SHAKE!!!**

**24 Hour Urine Collection Instructions:**
For collection of 24 hour urine, the patient should be carefully instructed to begin with an empty bladder by voiding and discarding urine at 7:00am, and then collecting all urine for 24 hours including a 7:00am voiding the following day.